217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

Nicor Gas
Attn: Nancy J. Huston
1844 Ferry Road
Naperville, Illinois 60563-9600

Application No.: 04080010 I.D. No.: 099832AAF
Applicant's Designation: Date Received: August 5, 2004
Subject: New turbine
Date Issued: February 25, 2005
Location: Station #50, 169 North 36th Road, Mendota

This Permit is herby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of construction of a new natural gas turbine as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1.0 Units: One (1) Natural Gas Compressor Turbine
Control: Low-NO_x Combustor

1.1 Description

The new natural gas compressor turbine would be used to raise the pressure of the natural gas and move it along the pipeline, transporting natural gas from production areas to customers. Once the new turbine is installed the Permittee plans to operate the existing units CC28 or CC29 as backup unit in case of breakdown of any of the other existing units.

1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Mars #51	Solar Mars Turbine	Low-NO_x Combustor

1.3 Applicability Provisions and Applicable Regulations

a. The "affected turbine" for the purpose of these unit-specific conditions is the natural gas turbine that is described in Condition 1.1 and 1.2. The turbine is subject to the New Source Performance Standard (NSPS) for Stationary Gas Turbines, 40 CFR 60 Subparts A and GG, because the heat input at peak load is equal to or greater than 10.7 gigajoules per hour (10 mmBtu/hr), based on the lower heating value of the fuel fired and the gas turbine commenced construction, after October 3, 1977. The Illinois EPA administers the NSPS for subject sources in Illinois pursuant to a delegation agreement with the USEPA.

b. Standard for Nitrogen Oxides:

i. Pursuant to the NSPS, 40 CFR 60.332(a)(2), no owner or operator of an affected turbine shall cause to be discharged into the atmosphere from such gas turbine, any gases which contain nitrogen oxides in excess of:

$$STD = 0.0150 \frac{(14.4)}{Y} + F$$

Where:

STD = Allowable NO_x emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y = Manufacturer's rated heat rate at manufacturer's peak load (kilojoules per watt hour), or actual measured heat rate based on lower heater value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt-hour.

F = NO_x emission allowance for fuel-bound nitrogen calculated from the nitrogen content of the fuel in accordance with 40 CFR 60.332(a)(3).

c. Standard for Sulfur Dioxide

Pursuant to the NSPS, 40 CFR 60.333, the owner or operator of the affected turbine shall comply with one or the other of the following conditions:

i. The owner or operator shall not cause to be discharged into the atmosphere any gases which contain sulfur dioxide in excess of 0.015 percent by volume at 15 percent oxygen and on a dry basis.

ii. The owner or operator shall not burn any fuel that contains sulfur in excess of 0.8 percent by weight.

d. The emissions of smoke or other particulate matter from the affected turbine shall not have an opacity greater than 30 percent, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 201.149, 212.123(b), or 212.124.

1.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected turbine not being subject to 35 IAC 212.321 because due to the nature of this process, such rule cannot reasonably be applied.

b. This permit is issued based on the project not being a major modification subject to 40 CFR 52.21, prevention of Significant Deterioration (PSD), because the emission levels are below the significant levels for all criteria pollutants.

c. This permit is issued based on the source continuing to be a minor source for Hazardous Air Pollutants(HAPs), because the potential emissions are less than 10 tons/year for the individual HAP and less than 25 tons/year for the combination of HAPs. (See Attachment A).

1.5 Operational and Production Limits and Work Practices

a. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate the affected turbine in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Illinois EPA or the USEPA, which may include, but is not limited to review of operating and maintenance procedures, and inspection of the source [40 CFR 60.11(d)].

b. i. The affected turbine shall only be fired with natural gas.

ii. Rated heat input capacity of the affected turbine shall not exceed 112.0 million Btu/hour.

1.6 Emission Limitations

a. The affected turbine shall be equipped, operated and maintained with dry low-NO_x burners.

b. Hourly emissions from the affected turbine shall not exceed the following limits:

Pollutants	Lb/Hr
PM	14.23
CO	13.88
NO_x	8.99
VOM	4.29
SO_2	0.38

c. Annual emissions from the affected turbine shall not exceed the following limits:

Pollutants	Ton/Yr
PM	3.25
CO	60.83
NO_x	39.40
VOM	18.83
SO_2	1.67

These limits are based on the maximum operating rate and continuous operation, i.e. 8,760 hours/year, for the affected turbine.

1.7 Testing Requirements

a. Within 60 days after operating the affected turbine at the greatest load at which it will normally be operated but not later than 180 days after its initial startup, the Permittee shall have emissions tests for the turbine performed by an approved testing service as follows.

b. The following USEPA methods and procedures shall be used for testing of emissions. For the turbine, measurement of NO_x emissions shall be conducted and data collected in accordance with the test methods and procedures specified in 40 CFR 60.335, unless USEPA approves alternative procedures for testing:

Location of Sample Points	USEPA Method 1 or 19
Flow and Velocity	USEPA Method 2 or 19
Flue Gas Weight	USEPA Method 3 or 3A or 19
Moisture	USEPA Method 4 or 19
Nitrogen Oxides	USEPA Method 20
Carbon Monoxide	USEPA Method 10
Volatile organic Material	USEPA Method 18

c. At least 60 days prior to the actual date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing and shall include as a minimum:

i. The person(s) who will be performing sampling and analysis and their experience with similar tests.

ii. The specific conditions under which testing shall be performed including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the turbine will be tracked and recorded.

iii. The specific determination of emission that is intended to be made, including sampling and monitoring locations. As part of this plan, the Permittee may set forth a proposal for approval by the performing emission testing of selected turbine provided that all turbines are fitted for testing; the identity of the engine to be tested is determined immediately before testing, by the Illinois EPA or otherwise randomly.

iv. The test method(s), which will be used, with the specific analysis method, if the method can be used with different analysis methods.

d. The Illinois EPA shall be notified prior to these tests to enable it to observe these tests. Notification for the expected date of testing shall be submitted a minimum of 30 days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing.

e. Three copies of the Final Reports for these tests shall be forwarded to the Illinois EPA, within 60 days after the completion of testing. The Final Report from testing shall contain a minimum:

i. A summary of results;

ii. General information;

iii. Description of test method(s), including a description of sampling points, sampling train, analysis equipment, and test schedule;

iv. Detailed description of test conditions, including:

A. Fuel consumption (standard ft^3);

B. Firing rate (million Btu/hr); and

C. Ambient temperature.

v. Data and calculations, including copies of all raw data sheets and records of laboratory analysis, sample calculations, and data on equipment calibration.

1.8 Monitoring Requirements

Pursuant to 40 CFR 60.334(b)(2), the Permittee shall monitor sulfur content and fuel bound nitrogen content of the fuel being fired in the affected turbine as follows unless such monitoring is waived or a custom schedule for sampling and analysis of fuel is approved by USEPA, in which case the Permittee shall comply with the terms of such approval.

For natural gas, which is supplied without intermediate bulk storage, the values shall be determined and recorded daily.

The analysis may be performed by the Permittee, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency [40 CFR 60.335(e)].

1.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected turbine to demonstrate compliance with Conditions 1.3, 1.5, and 1.6:

a. An operating log for the affected turbine, including hours of operation, load and firing rate;

b. Inspection, maintenance, and repair logs with dates and nature for the affected turbine.

c. Natural gas fuel usage for the affected turbine, scf/month and scf/year;

d. Heat content of the natural gas;

e. The sulfur and the fuel bound nitrogen content in the natural gas fuel used in the affected turbines shall be monitored pursuant to Condition 1.8;

f. Monthly and annual aggregate NO_x, CO, and VOM emissions from the affected turbine shall be maintained, based on operating data and the applicable procedures in Condition 1.12, with supporting calculations.

1.10 Reporting Requirements

a. The Permittee shall fulfill applicable notification and reporting requirements of the NSPS, 40 CFR 60.7 (a) and (b).

b. The Permittee shall promptly notify the Illinois EPA, of noncompliance with applicable requirements as follows:

i. Pursuant to 40 CFR 60.334(c), periods of excess emissions for sulfur dioxide that shall be reported are defined as follows:

Any daily period during which the sulfur content of the fuel being fired in the gas turbine may not comply with Condition 1.3(c) [40 CFR 60.334(c)(2)].

ii. Emissions of NO_x, CO and VOM from the affected turbine in excess of the limits specified in Condition 1.6(a).

c. Two copies of submittals and notification required by this permit shall be made to the Illinois EPA at the following:

Illinois Environmental Protection Agency
Division of Air Pollution Control
5415 North University
Peoria, Illinois 61614
Telephone: 309/693-5461 Fax: 309/693-5467

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276
Telephone: 217/782-5811 Fax: 217/782-6348

1.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

1.12 Compliance Procedures

a. Compliance with Condition 1.3(c) is to be demonstrated by the sampling and analysis of natural gas for sulfur content as required by Condition 1.8.

b. i. Compliance with the emission limits in Condition 1.6(b) shall be based on the recordkeeping requirements in Condition 1.9 and;

ii. For NO_x, CO and VOM the emission factors and rates developed from those measured during emission testing, if the affected turbine is properly operated. Otherwise, emissions shall be determined using the most appropriate emission factors selected based on good engineering judgment.

iii. For SO_2, the sulfur content of natural gas as determined in accordance with Condition 1.8.

Please note that the Permittee is allowed to operate the new affected turbine under this construction permit until the nest reissuance of the CAAPP Permit.

If you have any questions on this, please call Ricardo Ng at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:RNG:psj

cc: Region 2

ATTACHMENT A

Summary of HAPs Emission November 2004 (Tons/year)

Emission Unit	Horse-power	Million Btu/hr	Individual HAP		Total HAPs
			Lb/hr	Ton/year*	Ton/year*
IC engines 2SLB [A]					
CC3	1,000	8.0	4.42E-01	1.936	2.78E+00
CC4	1,000	8.0	4.42E-01	1.936	2.78E+00
IC engines 4SRB [A]					
SG1	310	2.5	5.13E-02	0.225	3.55E-01
SG2	704	4.0	8.20E-02	0.359	5.68E-01
SG3	310	2.5	5.13E-02	0.225	3.55E-01
SG4	814	5.9	1.21E-01	0.530	8.38E-01
CG5	225	1.8	3.69E-02	0.162	2.56E-01
CG6	225	1.8	3.69E-02	0.162	2.56E-01
CG7	225	1.8	3.69E-02	0.162	2.56E-01
CG28	225	1.8	3.69E-02	0.162	2.56E-01
Turbines [A]					
OC5	9,800	96.9	6.88E-02	0.301	4.24E-01
OC6	9,800	96.9	6.88E-02	0.301	4.24E-01
OC7	9,800	96.9	6.88E-02	0.301	4.24E-01
SC21	1,275	10.2	7.24E-03	0.032	4.46E-02
SC22	1,275	10.2	7.24E-03	0.032	4.46E-02
SC23	1,275	10.2	7.24E-03	0.032	4.46E-02
SC24	1,275	10.2	7.24E-03	0.032	4.46E-02
SC25	1,275	10.2	7.24E-03	0.032	4.46E-02
SC26	1,275	10.2	7.24E-03	0.032	4.46E-02
CC28	13,155	124.0	8.80E-02	0.385	5.42E-01
CC29	15,000	148.0	1.05E-01	0.460	6.47E-01
DR31	5,700	51.0	3.62E-02	0.159	2.23E-01
Mars 41	15,000	112.0	7.95E-02	0.348	4.90E-01
Mars #51	15,000	112.0	7.95E-02	0.348	4.90E-01
Dehydration[B]					
VV1	---	---	1.41E-01	0.618	1.04E+00
VV2	---	---	7.26E-02	0.318	5.61E-01
VV3	---	---	1.40E-01	0.613	1.03E+00
VV4	---	---	1.44E-01	0.631	1.08E+00
VV5	---	---	1.44E-01	0.631	1.08E+00
VV1-N	---	---	1.27E-01	0.556	9.44E-01
VV2-N	---	---	1.27E-01	0.556	9.43E-01
VV3-N	---	---	9.58E-02	0.420	7.19E-01
VV6	---	---	1.44E-01	0.631	1.07E+00
VV7	---	---	1.44E-01	0.631	1.06E+00
Storage Tanks[B]					
M1	---	---	1.40E-01	0.613	1.40E-01
UG1	---	---	2.90E-01	1.270	2.90E-01
M2	---	---	1.00E-01	0.438	1.00E-01
Total			1.98[A]	8.654[A]	2.27E+01

[A] Individual HAP based on formaldehyde

[B] Individual HAP other than formaldehyde

*Based on 8,760 hrs/year.

RNG:psj